

that day than on any other occasion; and I attribute the presence of *A. pennata* to this circumstance. They were very wary, and kept well out of harm's way.

5. *AQUILA NÆVIA* (Gm.). Spotted Eagle.

Met with at rare intervals throughout the desert, but must certainly be called a scarce species, at all events at this time of the year. We saw it in Palestine, and notably in the mountains of Moab and valley of the Jordan.

[To be continued.]

XV.—*Notes on the Ornithology of New Zealand.*

By WALTER L. BULLER, Sc.D., F.L.S., &c.

WHEN I undertook to write a history of the birds of New Zealand, I was not insensible to the difficulties of the task. The field was a comparatively unbroken one; and, with a few notable exceptions, the existing literature was confined to dry lists of names and characters of species. In the preparation of my work I had therefore to rely mainly on the results of my own observations, extending over a period of many years. At the same time I freely availed myself of the assistance of Mr. Potts and other local observers, whose contributions were, in every instance, duly acknowledged. Having produced a royal-quarto volume of some 400 pages, the bulk of it being purely original matter, it was not to be expected that my statements on every point would pass unchallenged, or that naturalists who think for themselves would indorse all my views. Besides, as I have explained in my preface, our present knowledge of many of the rarer species is confessedly imperfect, while in regard to all of them some new fact is being constantly added to the general stock of information. The notes and corrections of impartial observers in New Zealand will be very valuable to me, as they will assist in making a future edition of my work more exhaustive and complete. The first contribution of this kind is Captain Hutton's paper, which appeared in the last number of 'The Ibis.' But in at-

tempting to correct my inaccuracies Captain Hutton has fallen into some errors himself.

SCELOGLAUX ALBIFACIES.

Captain Hutton states that there is no evidence to show that the Laughing Owl was formerly more plentiful than it now is, or that it has almost totally disappeared. Of the former fact I have abundant evidence in the accounts given by the Maoris. As to the present scarcity of the bird, it may be sufficient to state that I have never heard of more than a dozen specimens, and have never seen but one living example. Captain Hutton does not state that he has ever met with this bird outside of a museum; and the peculiar sound "like two branches of a tree rubbing together," which he has so often heard in the New-Zealand forest, may, I think, be accounted for in a very simple manner, without inventing an Owl.

STRINGOPS HABROPTILUS.

Captain Hutton ought to have quoted the whole of the sentence; for I stated that "in all the essential characteristics of structure it is a true Parrot." My statement that "there is no physiological reason why the Kakapo should not be as good a flier as any other Parrot," must of course be read with the context. My argument was that *disuse*, under the usual operation of the laws of nature, had, in process of time, occasioned this physical disability of wing. My statement that this species subsists chiefly on mosses rests on the authority of Dr. Haast, who has collected and dissected far more specimens than any other person in the colony, and whose close study of the bird in its native haunts is sufficiently manifest from the paper which appeared in 'The Ibis' of 1864 (pp. 340-346). Captain Hutton does not inform us what particular kind of moss he offered in vain to his captive bird.

NESTOR OCCIDENTALIS.

I am very doubtful myself about this species; and Dr. Finsch may therefore be right in uniting it to *N. meridionalis* (see my remarks, B. of N. Z. p. 50). I have in my possession, however, a note from Captain Hutton declaring himself in

favour of *Nestor occidentalis* as a species, distinguishable from *N. meridionalis* "by having the upper mandible more compressed and flat on both sides, with the tooth further out and the lower mandible not reaching it." For my own part, I attach very little importance to these variations in the character of the bill; for that member is more or less variable in all the species of *Nestor*.

HETEROLOCHA ACUTIROSTRIS.

Mr. A. H. Garrod, in his exhaustive account of the anatomy of this bird (P. Z. S. 1872, pp. 643-647), states that the tongue is "slightly bifid at its apex and a little prolonged backwards at its lateral borders."

HALCYON VAGANS.

Captain Hutton is quite mistaken in his remarks on this bird. I have myself observed it catching fish in the manner described; and Mr. Potts, who is known to be a very accurate observer, states that "fish and crustacea furnish some portion of its food supply" (Trans. N. Z. Inst. 1869, ii. p. 53). Nor do "the rest of the genus subsist entirely on insects and crustacea." Dr. Jerdon states that *Halcyon smyrnensis* catches fish, "for which it sometimes dives," and that *Halcyon pileata* "feeds both on fish and insects." *Halcyon gularis* is said to be a fish-eater; and Mr. Motley declares that *Halcyon coromanda* "subsists entirely on fish." Dr. von Heuglin states that *Halcyon semicærulea* is "more of a fish-eater than fond of orthoptera," and that *Halcyon chloris* likewise habitually fishes. To come nearer home, I may add that Mr. E. P. Ramsay, of Sydney, records that he has watched *Halcyon sanctus* "catching flies from the surface of the water, and occasionally a stray fish or two."

PROSTHEMADERA NOVÆ-ZEALANDIÆ.

The young figured in my work is from a specimen in the British Museum. My artist has somewhat exaggerated the white on the neck and given it too much of a crescent form. I must refer the reader to my description of the young (B. of N. Z. p. 88), where this feature is specially mentioned.

ANTHORNIS MELANURA.

The extensive wooded district lying between Wangarei and the North Cape is not inhabited by Maoris at all; and Captain Hutton's argument therefore fails. Dr. Hector, who made a geological survey of this district in 1868, did not meet with a single *Anthornis*, whereas formerly these birds existed there in thousands. As Captain Hutton has "never observed any bright-coloured feathers," he cannot, I think, have collected many nests. The observations recorded by Mr. Potts (Trans. N. Z. Inst. 1869, ii. p. 56) fully accord with my own.

ORTHONYX ALBICILLA.

I cannot concur in the opinion expressed by Captain Hutton; for the two birds certainly belong to the same genus. I confess, however, that the form is somewhat aberrant from the typical *Orthonyx*.

As to resemblances of song, that is purely a matter of fancy and association. I have never considered the song of our Wood-Robin (*Miro longipes*) in the least degree like that of the Canary.

CERTHIPARUS NOVÆ-ZEALANDIÆ.

I cannot accept Captain Hutton's identification of the supposed eggs of this bird in the Otago Museum without further proof. I have already pointed out (B. of N. Z. p. 105) that he had confounded this species with the very common *Orthonyx albicilla* of the North Island. He has since repeated the error in his 'Catalogue' by stating (p. 11) that *Certhiparus novæ-zealandiæ* inhabits "both islands."

GERYGONE FLAVIVENTRIS.

The fact that this species uses spiders' nests in the construction of its own nest was first mentioned by me in 1870 (Trans. N. Z. Inst. vol. iii. p. 42), and was contradicted by Captain Hutton, in his usual emphatic manner, in the critical notes appended to his 'Catalogue.' There is nothing unaccountable, as it seems to me, in the use of the green-coloured nest of *Epeira verrucosa*, and the rejection of the orange-coloured nest of *E. antipodiana*. It is easily explained on the principle of assimilative or protective colouring.

My description of *G. albofrontata* was taken from the type specimen in the British Museum.

XENICUS LONGIPES.

Captain Hutton is in error in stating that the specimens of *Xenicus longipes* in my collection (Colonial Museum) were wrongly determined. There is no such species as *Xenicus stokesii*. The explanation of the strikingly incorrect figure of *X. longipes* in the 'Voyage of the Erebus and Terror' will be found at page 116 of my 'Birds of New Zealand.' I may mention that in company with the late Mr. G. R. Gray, I examined Forster's original (unfinished) drawing of this bird, in which the bill is depicted as straight and the eye-circlet almost wanting. Mr. Gray told me that his artist was responsible for the alterations in the published figure (which represents a bird with an upturned bill like *Acanthisitta*), and that his own description of the species (Voy. Ereb. & Ter. p. 4) was taken from the latter! After we had thus sifted the matter and compared specimens, Mr. Gray readily admitted that his *Xenicus stokesii* (Ibis, 1862, p. 219) would not stand.

MIRO TRAVERSI.

Captain Hutton misquotes me in a very unfair manner. I never said that he had made any *suggestion* to me about naming the bird. The specimen was kindly sent to me by Dr. Hector without any restriction; and I might have anticipated Captain Hutton by describing it under any other name. Knowing how the case stood, however, I stated (p. 123) that I had "much pleasure in adopting Captain Hutton's proposal" to name the species in honour of the discoverer. At that time no description of the bird had been published; nor did I receive the proof of Captain Hutton's paper in the 'The Ibis' till after my account of *Miro traversi* had been printed off. Part ii. of my work, containing this, was published in June; 'The Ibis' a month later.

MYIOMOIRA MACROCEPHALA.

Dr. Finsch agrees with me in opinion that *Myiomoira dieffenbachii* is not separable from *M. macrocephala*.

GLAUCOPIS CINEREA.

Captain Hutton and Mr. Travers are quite right about the peculiar feeding-habit of this bird. I frequently observed it in my captive specimen of *G. wilsoni*, but somehow omitted to record it. I have noticed this habit in *Porphyrio melanotus* (B. of N. Z. p. 186).

CARPOPHAGA NOVÆ-ZEALANDIÆ.

My description of the egg of this species was taken from one obtained by me in the Upper Manawatu many years ago. The specimen came into my hands very much broken; and as my measurements were consequently uncertain, I adopted those given by Captain Hutton as from a perfect specimen, never supposing that he could mistake the egg of a Petrel for that of a Pigeon! The addition "*sometimes* marked with obscure purplish spots" was on the same unfortunate authority; for my specimen had no spots whatever, and the natives had always described the egg to me as being perfectly white.

OCYDROMUS EARLI.

Captain Hutton expresses some astonishment that I did not preserve Dr. Hewson's specimen of the hybrid Wood-hen, or ascertain what it developed into. The bird was promised to me, but unfortunately was shortly afterwards consigned to the pot; and this put an end both to the specimen and its "development." Captain Hutton quotes me incorrectly in stating that I carefully examined *several* supposed hybrids.

OCYDROMUS AUSTRALIS.

Dr. Finsch is probably right in distinguishing a second species (*O. troglodytes*). I have myself stated (B. of N. Z. p. 171) that "examples from different localities exhibit so much variety in size and plumage as to suggest the existence of another, closely allied species."

RALLUS DIEFFENBACHII.

In my letter which appeared in the last number of 'The Ibis,' I stated that Captain Hutton was entirely wrong in assuming that *Rallus dieffenbachii* and *R. philippensis* are the same, or very nearly allied species (Ibis, 1873, p. 350). The

following sketch (by Keulemans) from specimens in the British Museum will sufficiently illustrate my argument :—

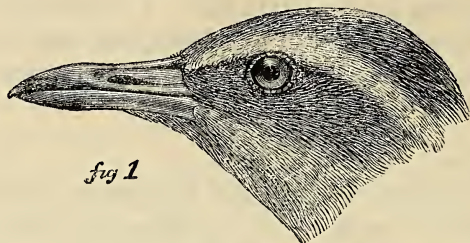


fig 1

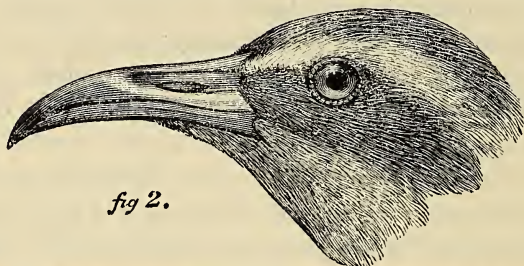


fig 2.

Fig. 1. *Rallus philippensis*.

Fig. 2. *Rallus dieffenbachii*.

RALLUS PHILIPPENSIS.

Captain Hutton is in error in stating (*l. c.*) that "*R. philippensis* has no claw at the end of the thumb." The claw is well developed and very sharp at the point.

CHARADRIUS FULVUS.

Captain Hutton is under a wrong impression as to my having presented the specimen of *C. fulvus* which exists in the Auckland Museum. It was there as far back as 1855; and beyond the assurance of the curator that it was a New-Zealand example, I know nothing whatever about it. The species (according to Drs. Finsch and Hartlaub) is distributed over the islands of the South Pacific; and there is nothing "unlikely" in its occurrence in New Zealand.

ANARHYNCHUS FRONTALIS.

Captain Hutton says he has never seen this bird "run round a stone" in the manner described by Mr. Potts. But this is merely negative evidence. Mr. Potts describes this habit from *actual* observation. Captain Hutton's principal argu-

ment against it is, that "unless the bird is also furnished with some means of seeing round a corner, it would not be able to see the insect it wanted to catch;" but an essential part of his own theory of the use of the bent bill is that it enables the bird "to search over a greater extent of algæ for creatures that *it could not see*, than if it used only the point of the bill."

NYCTICORAX CALEDONICUS.

Captain Hutton acknowledges that his only reason for recording this species as occurring in both islands was that he "somehow got the idea into his head." Statements made in this loose and unscientific manner are not very creditable to a professed naturalist. My specimen of *Nycticorax caledonicus* was obtained in the North Island; and I heard of two instances of the occurrence of this bird at Hokitika, in the South Island. This was my authority for including the species in my work; and Captain Hutton is therefore mistaken in supposing that his 'Catalogue' had led me astray.

I did not give any particulars of locality &c. when I handed my collection of New-Zealand birds over to the Colonial Museum; but a number was affixed to each specimen corresponding to that on my list. With Dr. Hector's concurrence, and for obvious reasons, all further information was reserved for my own work, then in course of preparation.

LARUS BULLERI.

Although this bird may sometimes form a rude nest of dried bents, it usually deposits its eggs on the ground; so also does *Larus scopulinus*.

DIOMEDEA MELANOPHRYS.

I had unfortunately overlooked Captain Hutton's paper, or would certainly have quoted it, especially as it qualifies his former statement (Ibis, 1865, p. 278) that *D. melanophrys* is "quite diurnal in its habits." 283

PELECANOIDES URINATRIX.

I still think that "a rapid fluttering movement along the surface of the water" correctly describes the flight of this bird. Mr. Gould, in his account of this species, says that

"its flight is a curious fluttering motion, performed so close to the surface that it rarely rises high enough to top the waves, but upon being met by them makes progress by a direct course through instead of over them;" and Latham states that it congregates in flocks "fluttering upon the surface of the water or sitting upon it."

PUFFINUS BREVICAUDUS.

My specimen was picked up on the sea-beach between Waikanae and Rangitikei, where this bird is often cast ashore. The natives on that coast identified it as the same that breeds in the Kaimanawa and Taupo-patea ranges. I can hardly think they would confound it with *Procellaria parkinsoni*, which is a very different bird.

PUFFINUS GAVIUS.

In giving *P. opisthomelas* (Coues) as a synonym of this species, I had no wish to ignore Captain Hutton; but it is manifestly impossible in a list of synonyms to do more than give the leading reference in each case. Captain Hutton has apparently forgotten that we went into the question together before I left the colony, and came to the conclusion that *P. opisthomelas* and *P. gavius* were the same. Dr. Coues states that the former species is abundant on the south Pacific coast of North America. Assuming, therefore, their identity, I was justified in assigning our bird a "wide oceanic range." To Dr. Finsch belongs the credit of having since put us right on this point. This author says (J. f. O. 1872, p. 256), "Hutton's account of this species, which, since Forster's time has not been examined, appears to be perfectly correct; but he is certainly mistaken when he asserts most positively that *P. opisthomelas* (Coues) is the same species. This could only be determined by actually comparing the typical specimens; and this would clearly show a difference between the two species. Hutton's description is far too superficial to allow of any thing approaching to a correct opinion."

As Captain Hutton is so very sensitive about not being acknowledged, it is a little surprising that when he wrote to 'The Ibis,' some time ago, stating that he "had found out

his mistake" in describing *Graucalus melanops* as *Colluricincla concinna*, he did not also state to whom that discovery was due.

THALASSIDROMA FREGATA.

My experience differs from Captain Hutton's; for I have always found *Thalassidroma melanogaster* more plentiful on our shores than *T. fregata*.

PROCELLARIA PARKINSONI.

When I left the colony all the known examples had been obtained in the Hauraki Gulf. I am aware that the species has since been met with in Cook's Strait and on other parts of our coast.

DAPTION CAPENSIS.

What I meant, of course, in the words quoted by Captain Hutton, was the *known* history of this familiar species; for I had nothing to add to it. It is equally common on the Atlantic and Pacific Oceans, and many excellent accounts have been written of it.

PHALACROCORAX NOVÆ-HOLLANDIÆ.

I cannot see how Captain Hutton's visit to the South Island in any way affects the argument. The only question is whether the difference of plumage (admitting it to be constant) entitles our bird to rank as a distinct species. I follow Mr. Gould in believing that it does.

PHALACROCORAX BREVIROSTRIS.

This species certainly does occur in the Chatham Islands; for I shot a specimen there myself during a short visit in 1855.

PHALACROCORAX PUNCTATUS.

I stated (B. of N. Z. p. 336) in reference to this figure that I was by no means certain whether this was not only a seasonal state of plumage. I cannot, however, accept Captain Hutton's dictum on this point till he gives some facts in support of it. Mr. Fuller, who has collected scores of these birds at all seasons, rejected this view, and assured me that he had found the crested and the uncrested birds breeding in separate pairs at one and the same time. Both Dr. Haast

and Mr. Fuller were inclined to consider the uncrested bird a distinct species.

APTERYX MANTELLI.

The few instances that Captain Hutton records do not suffice to make *Apteryx mantelli* a common species in the North Island. Its practical scarcity may be inferred from the fact that an offer of £5 for a specimen, which appeared some years ago in the Maori newspaper, failed to obtain one.

I must here record my total dissent from the opinion expressed by Captain Hutton, and based on the structure of the egg-shell, that *Apteryx* "belongs to the Carinate type of birds" (Trans. N. Z. Inst. iv. p. 167); for such a view is entirely opposed to the principles of modern classification.

XVI.—*Remarks on Mr. Legge's Paper on Ceylonese Birds.*

By E. W. H. HOLDSWORTH, F.L.S. &c.

THE publication of Mr. Legge's observations on the distribution of birds in the southern hill-region of Ceylon will doubtless be received with satisfaction by all who are interested in the somewhat peculiar avifauna of that island; and I especially am glad of the information he gives about a district with which I have had only a slight personal acquaintance. Mr. Legge is an active worker, and has told us some interesting ornithological news; but there are some points in connexion with particular species mentioned by him about which more precise information would be desirable, and one or two others which are perhaps open to criticism. As we are both anxious to have an accurate account of the manners and customs of the birds of the island placed on record, some comments will, I hope, not be considered altogether out of place.

The particular point of interest to me in Mr. Legge's paper is the record of the occurrence at 1500 or 2000 feet, in the south of the island, of birds hitherto supposed to be generally confined to the upper hills, and especially abundant at an elevation of about 6000 feet in the central province.